NEW ENGLAND FARMER.

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TO THE EDITOR OF THE NEW ENGLAND FARMER.

SIR—Having seen in your papers some observations on the grafting and raising of apple trees, in which I have had much experience, am free to communicate the result of my observations.

I differ in opinion from such European authors as recommend the ground for nurseries to be made extraordinarily rich, as I have observed that young trees, transplanted from a richer to a poorer soil, do not flourish or become so productive as such as are transplanted from a poorer to a richer soil.

The seeds of apples will not produce the same kind of fruit; that I have fully proved, by one experiment. I raised in my garden, from the seeds of one favorite apple, ten trees, that after being transplanted in my orchard, grew to bear fruit. Not one of them resembled their mother apple, and no two were like each other. Seven of them produced very small sour apples, some white, some striped, some yellow, some early, others late. Those seven trees I marked for grafting. Of the other three, the largest and most thrifty tree produced an excellent, pleasant, long, striped apple, of good size, very mellow and juicy in autumn, neither sweet nor sour. The next largest tree produced a red, sweet apple, about the shape and size of the flat pippin, and will keep in the winter near as well. The other, the smallest tree of the ten, which grew the longest time before it produced, bore large, yellow, flat, sweet apples, that weigh about one pound, and fall off in due time for drying or making cider.

I have estimated such parts of my orchard as have been planted with trees, without grafting, to average about three good and valuable kinds of apples, from every ten trees. I disapprove of grafting the trees, when small in the nursery, as we may cut off better fruit than we insert, and perhaps destroy some better and larger kinds than are yet known.

I believe in *Darwin's* ideas, that the different kinds of apples have their certain age, after which they depreciate and expire, and that grafting is but an elongation of the same declining kind of tree—especially as the *Vandeveer* that used to be so large and fine since my remembrance is now extinct, in the place of my nativity, with a bitter rot, and the *flat pippens. Rhode Island greenings*, and *blue pearmains*, are very much depreciated in size and flavor.

At an early period of life, I was instructed in the practice of grafting, and thought I understood it perfectly, but a circumstance took place to convince me to the contrary, by some important facts in that art that should be generally known.

Thirty-five years ago, last winter, I was travelling in the upper part of Maryland, near the banks of Potomac river, and was informed that they had a curious old German doctor, a man of great science, that had paid much attention to orcharding;—that he had made between 200 and 300 acres of grafted orchard, and made vast quantities of cider all winter to supply the cities of Baltimore and Alexandria, besides feeding and fattening a large stock of creatures. I turned out of the road and went to see him, and was surprised, as I rode to the door, to hear him tell his negro, in German, to give my horse half a bushel of sweet apples. His situation was on lime stone land, of a S. W. descent—some very rough—but his trees appeared to grow well amongst the rocks. In places where the ground suited he irrigated it with lime stone springs, for mowing land. His orchards were too extensive for my view. He had a number of large frame buildings, in which he had vast quantities of apples gathered to *freeze*, and said that apples after being frozen made the most and best cider. It was a mild thawing time, and he had abundance of people making cider. They ground their soft apples under large wooden wheels, turning in circular troughs. On the beds of the presses they had frames of slats in which they put straw to retain the soft pomace. Their presses were long beams, say 60 feet, raised and drawn down with levers. As the establishment stood on descending ground the cider ran from the presses in troughs, and passed through several strainers before it entered the casks.

He informed me that he had been bred to orcharding in Germany, that he had raised and planted all his trees, and grafted the greater part of them, after they began to bear, if he disliked the fruit.

I observed that I thought the season would be too short for grafting so many trees. He told me that it might be performed any time in the fore part of summer, if a wet growing time, and I would observe the following directions:

1st. Be careful not to loosen the bark of the stock in splitting it; and the safest way to guard against that is to split the bark with a sharp pointed knife, before the splitting of the stock.

2d. As after the leaves are grown it is not expected to use scions from a distance, but to cut them out of the orchard as wanted, be sure in selecting the grafts to cut them in such manner as to always take the bulge, between the year's growth, to shave and set in the stock, as in that joint or bulge, between the years growth, the wood is curled, open and porous, to receive the sap readily from the stock, and such scions will grow and flourish—when if taken from any other part of the twig they would not grow.

3d. The clay should be very fine and tough, and pressed and bound water tight round the stock below the split to retain all the sap that oozes out to support the graft.

By strictly adhering to this German science I have grafted several apple trees as late in the season as the latter part of June, that flourished and grew well, and are the best of bearing trees.

From all the experiments that I have tried in raising orchards, I would advise setting out the trees, and seeing a sample of their fruit before grafting, as all the best kinds of apples were at first natural, and perhaps by such a general trial some better kinds may appear than yet known.

I would also advise in grafting such bearing trees, to only take off half the top in one season. I have often taken off the whole, and if the season is wet they have done well, but if the season proves hot and dry, the trees generally die, or the sun kills the bark on the south sides of them, and then they are ever after defective; a rot takes place, and such trees generally blow down.

I have also observed that apple trees grow and bear the best when planted beside a stone wall, more especially these late seasons of great drought, that in parts of the country where the fences are generally of stone, abundance of apples might be raised without the trees incommoding the plough, and where there is only one row of trees across a field they may be planted within 15 or 20 feet of each other. In planting trees by a wall I would recommend as much as may be, to plant them on the north sides to keep the blossoms back and secure from the late frosts. SAMUEL PRESTON

Stockport, Pa. Oct. 19, 1822.

FOR THE NEW ENGLAND FARMER.

FROM A CORRESPONDENT IN MAINE.

Mr. Editor,

I have been taking a tour of a few weeks, from the tide waters of the wild and turbulent Androscoggin, along its banks to the high lands of Maine. It was a novel sight, when I obtained any view of the river, to contemplate its banks, and the rocks in its bosom, covered and heaped with mill logs. This I have witnessed sixty or seventy miles from its mouth. The mill men there depend entirely on a freshet to waft their lumber down. There has not been any of sufficient height this season, and mills that would cut two hundred thousand feet of boards a day have done nothing for the season.

The banks of this river are high and forbidding, excepting below stupendous falls, where the water seems to rest from its labor. It is here that we find the intervale, made, or alluvial land, which bears a heavy and almost certain crop of almost every species of vegetable. The intervale at Durham is extremely beautiful; so is the extensive one at Jay Point, second to none I ever saw, excepting the Ox-bow at Newbury, Vt. One farmer owns 300 acres of land, under improvement, and can easily cut 200 tons of hay in a season. He tells me the made soil is from six to thirty feet deep. As you recede from the sea-board, clay almost entirely disappears. The soil of the high lands is generally of yellow loam, with a gravelly bottom, and is excellent for grazing. Barley, an almost certain crop on our sea-board, was fine this year. Rye, through the country, a middling crop. Wheat, miscrable, that lurking enemy at the root destroyed many fields entirely; it is a great desideratum with the farmer to find a remedy. Oats, a great crop. Potatoes, on the sea-board, good; on the high-lands, very much stricken with rust, though nearly a common crop. Buck Wheat produces well, and I was pleased that provident farmers had sowed it in sight of their bee-hives. Notwithstanding the despair of the first week in July, I am told there has not been so great a crop of hay for-

twelve years. The fall feed never was better. In the new settlements, Clover Seed is a staple article of exportation. It was excellent this year. In this fine grazing country, they are now gathering their droves, mostly of young cattle, for the Massachusetts market. It has been a choice season for the dairy women. Their cheese, though not always equal to the Rhode Island, is not far inferior. Their butter stands unrivalled. I have had the honor of visiting a number of dairy rooms in the neighborhood, and from their reports can come pretty safely to this result, viz. That from eight good cows they have averaged a ton of butter and cheese this season. Mr. Thompson, of this place, has made over a ton, and 1000 lb. of his cheese is of new milk, and looks very fine. From his statements, and those of others, I have come to the above-mentioned ratio. There are nine farmers in this neighborhood whose amount of stock in cows is 88 cows. They have therefore made eleven tons of butter and cheese this season. Mr. Ira Thompson, of this place, has raised an apple weighing 25 ounces, and measuring 15 1-2 inches in circumference. The harvest of apples was never so great. The young orchards here are rapid of growth, and bending to the ground with fruit. A number of thousand bushels of the New York russets have been transported from this place and Turner to Hallowell, for the New Orleans market.

SPECTATOR.

Livermore, Oxford Co'y. Oct. 23, 1822.

FACTS AND OBSERVATIONS RELATING TO

AGRICULTURE & DOMESTIC ECONOMY.

ON REARING CALVES.

Boil one quart of flax seed in six quarts of water for ten minutes, and it will become a good jelly when cold. Give this jelly to calves with hay tea, three times a day. Mr. Thomas Crook, a writer in the 5th vol. of the Transactions of the Bath Society, asserts that he weaned a great number of calves with this composition; and adds, "My calves are kept in a good growing state, and are much better than my neighbors that are reared by milk—they do not fall off so much when they come to grass."

TO MAKE HAY TEA FOR CALVES.

Take about a pound of red clover hay, well got in, and six quarts of clear spring water; boil them together till the water is reduced to four quarts; then take out the hay and mix a pound of barley, oat, or bean meal, amongst a little water; put it into the pot or chaldron while it is boiling, and keep it constantly stirring until it is thickened. Let it cool, then give it to the calf, adding as much whey as will make a sufficient meal. This is a cheap way of rearing calves, and the valuable article of milk may be saved for other purposes.

American Farmer.

DIRECTIONS FOR FEEDING CALVES.—FROM REES' CYCLOPEDIA, &C.

Where it is the custom to rear calves with skim-milk, it should always be boiled, and suffered to stand until it cools to the temperature of that given by the cow, or in a trifling degree more warm, and in that state given to the calf. Milk is frequently given to calves when warmed only; but that method will not succeed so well as boiling it. If the milk be given over-cold it will cause the calf to purge. When this is the case, put two or three spoonfuls of rennet in the milk, and it will soon stop the looseness. If, on the contrary, the calf is bound, bacon broth is a very good and safe thing to put into the milk. One gallon, or rather more, of milk per day will keep a calf well till it be thirteen weeks old. A calf may then be supported without milk, by giving it hay, and a little wheat bran once a day, with about a pint of oats. The oats will be found of great service, as soon as the calf is capable of eating them, in promoting its growth. The bran and oats should be given about mid-day; the milk in equal portions, at 8 o'clock in the morning, and 4 in the afternoon. But, whatever hours are chosen to set apart for feeding the calf, it is best to adhere to the particular times, as regularity is of more consequence than is generally supposed. If the calf goes but an hour or two beyond its usual time of feeding, it will feel uneasy, and pine for its food.

Calves reared in this manner are to be enticed to eat hay, or some other similar material, as early as possible; and the best way of doing this is to give them the sweetest hay in your possession, and but little at a time. Turnips or potatoes are very good food as soon as they can eat them; and they are best cut small and mixed with hay, oats, bran, and such articles, at the time of their being given. When bacon or pork is boiled it is a good way to preserve the liquor or broth, and mix it with milk for the calves.

It has been suggested that it is sometimes a good convenient plan, to bring up calves under a sort of foster mother; an old cow with a tolerable stock of milk, will suckle two calves, or more, either turned off with her, or at home, keeping them in good condition, until they are old enough to shift for themselves; they ought to suck the first of their mother's milk, for two or three days, although many are weaned without ever being suffered to suck at all. Calves, whether rearing or fattening, should always suck before milking, the cow being milked afterwards, as the first and thinnest of the milk is sufficiently rich for them. Old milk often scours very young calves; but the effect generally goes off without any ill consequence. Skimmed milk and second quality of flour are sometimes made use of. The large short horned breed of calves mostly consume, daily, at three meals, three quarters of a pound of flour each, boiled up in skimmed milk or other liquid.

In the Rural Economy of Norfolk, it is remarked by Mr. Marshall, that some farmers raise their calves all the year round. Others rear in winter only. In general, however, they begin early in winter to rear their calves, some as early as Christmas. No distinction is made between males and females, both being equally objects of rearing, and are both occasionally subject to castration, it being a prevailing custom to spay all heifers intended to be fatted at three years old.

Among other substitutes for new milk, the method proposed by the duke of Northumberland is to take one gallon of skimmed milk, and to about a pint of it add a large table spoonful of molasses, stirring it till it is well mixed; then take an ounce of linseed oil cake, finely pulverized, and with the hand let it fall gradually in very small quantities into the milk, stirring it in the mean time with a spoon or ladle, until it be thoroughly incorporated; then let the mixture be put into the other part of the milk, and the whole be made about as warm as new milk, when it is first taken from the cow, and in that state it is fit for use. The quantity of oil cake powder may from time to time be increased as occasion may require, and as the calf becomes inured to the flavor of it.

The method of weaning calves is thus prescribed by an English writer. The most suitable season for that business is the early part of the spring, as such calves as are weaned at a late period seldom attain any great size. Having a cow suited to the purpose, which drops a calf, let it be suckled in the usual mode, till it hath completed the third week of its age, when instead of turning it to the cow, it is to be suckled by thrusting its head into a pail of new milk, and the finger of the person who directs the business is to supply the place of a teat. At first the calf may be rather awkward at sucking the finger, but this will soon become familiar, and after a while a lock of hay may be substituted for the teat; and as the calf advances in age it will drink the milk without assistance. At the season when the calf is thus weaned from the teat, it ought to be turned abroad, in the day time, into a small close or orchard near the yard, where there is a good bite of grass. As there will, generally, be more than one calf weaned in a season, they will each be company for the other, and become, in a short time, reconciled to their situation. This pasture should be at some distance from that wherein the dams are turned, and there should be neither ponds nor ditches, nor any other annoyance, which may endanger the lives of these youthful animals; and in order to habituate them still more to their pasture, their pottage should be carried clean to them at their feeding hours. For the first month or six weeks the calves ought, every night, to be brought out of the meadow and lodged in pens; but after this time, they may be left in their pasture, as well in the night season as in the day, and at this time their food may be lowered by degrees, till it be reduced to water only, for when the calves get to the age of twelve or fourteen weeks, they will no longer require the aid of this sustenance, but will be able to satisfy their appetites by grass. Care, however, must be taken through the summer that they be frequently shifted from one pasture to another, in order that they may be kept in good flesh, and enabled to grow with celerity. In the latter part of September the calves should be taken into a yard; and if they were allowed the indulgence of a small close by themselves, it would be still better. And here their taste should be gratified with the best and sweetest hay that can be procured, with an outlet on a dry pasture, where, in fine open weather, they may be permitted to enjoy themselves; and it would redound greatly to their welfare, if, on the approach of winter, a shed was to be erected for them to repose in during the night, and for shelter in tempestuous days. So essential are warmth and good living to young animals of every description, that the care, which has been taken of them in their early days will be manifest in every state of their future growth. At two years old the heifer may be suffered to take the male, but it would be still better for the cow, and more to

the interest of the farmer, if this was not permitted till the animal was three years old.

Mr. Beatson, in a useful communication to the British Board of Agriculture, observes, "that the only reason he can assign why calf pens should be within the cow-house is, that it saves a little trouble to the dairy maid, by having a shorter distance to carry the milk. In general, however, it is a plan not to be recommended, as every person, who has had any experience among cows must know how naturally and forcibly a newly calved cow expresses her attachment to her calf; with what care and anxiety, if permitted, she licks it all over, and uses every exertion to protect it from injury; how the tender calf clings to its affectionate mother, as if sensible that to her alone it can trust for protection; and yet the poor helpless creature is dragged away, and placed, perhaps, within its mother's view, or at least within her hearing, as if on purpose to augment her sufferings. Its doleful cries keep alive the pangs of the unhappy cow; she struggles to break the chain that binds her fast, and seems restless and uneasy whenever approached. In such a state of agitation it is impossible she can ever feed well, or give that quantity and quality of milk she would otherwise furnish. Where there are many cows kept, and perhaps several of them lately calved, a single calf may keep them all in this restless state; to remedy which the best way is to have the calves at such a distance, or at least so thick a wall between them that the cows cannot hear their cries. The cow will then soon forget her calf, and will both feed and milk the better for it; therefore they should be as near as may be without being liable to the above objections.

The principal thing to be observed in the construction of calf pens is the laying of the floor. This should be made of lath or spars, about two inches broad, laid at the distance of an inch from each other upon joists, so as to make the floor one, two or three feet from the ground, as the situation will admit. This not only keeps the calves quite dry, by allowing all the moisture to pass immediately away, but admits fresh air below the bedding, and thereby preventing that unwholesome disagreeable smell too often found among calves. The place below the floor should be frequently cleaned, as well as the floor itself, whenever it becomes wet or dirty; but it is not right to allow the litter to increase to a great thickness, otherwise the moisture will not so easily pass through. Calf-pens are, however, too often made without this sparred floor, and the fresh litter is always laid on the old, till the calves are removed, which is a slovenly practice, and not by any means to be recommended.

Dr. Willich's Domestic Encyclopedia states that "in order to make calves fine and fat, the best and most efficacious way is, to keep them as clean as possible, by elevating the coops in such a manner that the sun may not have too great power over them, and to such a height above the level of the ground that their urine may pass off; by giving them fresh litter every day, and by suspending over the coop a large chalk stone so that they can easily lick it. Besides this, it is usual to bleed them when they are about a month old, and again just before they are slaughtered; which practice contributes in a considerable degree to the beauty and whiteness of the flesh, and is therefore more frequently repeated by some persons; but this is not altogether necessary; twice bleeding being fully sufficient for that purpose, in the opinion of the most experienced breeders.

A METHOD OF MAKING GOOD BUTTER FROM THE MILK OF COWS FED ON TURNIPS.

Let the vessels which receive the milk be kept constantly clean, and well scalded with boiling water. When the milk is brought into the dairy, with every eight quarts mix one quart of boiling water, and then put it up to stand for cream.—*Hunter's Georgical Essays.*

A METHOD OF PRESERVING CREAM.

Take twelve ounces of white sugar, and as many grains of finely powdered magnesia, and dissolve them in a small quantity of water, over a moderate fire. After the solution has taken place, twelve ounces of new cream should be immediately added, and the whole uniformly mixed, while hot. Let it then gradually cool, and pour it into a bottle, which must be carefully corked. If kept in a cool place, and not exposed to the air, it may be preserved in a sweet state for several weeks and even months.

Domestic Encyclopedia.

HOW TO SAVE HORSES FROM BARNS ON FIRE.

Horses are frequently burnt to death when barns or stables are on fire, owing to the impossibility of leading or driving them out of the building, while their eyes are dazzled by the blaze. But we are assured that by simply covering their eyes with a bag, a coat, or a pocket handkerchief, they may be led out of danger without trouble or difficulty.

METHOD OF PRESERVING YOUNG PLANTATIONS OF TREES FROM BEING INJURED BY HARES OR RABBITS—BY WILLIAM PATTENSON, ESQ. OF IBORDEN, KENT.

From the Transactions of the Society for the Encouragement of Arts, &c.

Hares, rabbits and rats, have a natural antipathy to tar; but tar, though fluid, contracts (when exposed to the sun and air for some time) a great dryness, and a very binding quality; and, if applied to trees in its natural state, will occasion them to be bound. To remove this difficulty, tar is of so strong a savour, that a small quantity, mixed with other things, in their nature loose and open, will give the whole mixture such a degree of its own taste and smell, as will prevent hares, &c. from touching what it is applied to.

Take any quantity of tar, and six or seven times as much grease, stirring and mixing them well together; with this composition brush the stems of young trees, as high as hares, &c. reach, and it will effectually prevent their being barked. I believe, if a plantation of ash (which they are very fond of) were made in a rabbit-warren, this mixture would certainly preserve it. These animals do great mischief amongst flowering shrubs, and are particularly fond of Spanish broom, Scorpion senna, and evergreen Cytisus. I have had those shrubs eaten down to a stump; but, as the mixture cannot be conveniently applied to them, I have enclosed their branches with new tar twine, putting it several times round the shrub, which has had the desired effect. Tar twine, by being exposed to the air and rain, will lose its smell, consequently must be removed as occasion requires; but the mixture is always to be preferred, where it can be used.

☞ It is probable that the abovementioned composition would preserve young trees in nurseries from the depredations of the field mouse, which are often fatal to young fruit trees in many parts of the United States.

Ed. N. E. Farmer.

SCAB IN SHEEP.

Every part of a sheep's body is liable to be attacked with this disease, which may be radically cured if attended to. It is more obstinate on the lips and nose, than any where else, because the animal rubs those parts while eating. The cheapest and simplest remedy, is an ointment composed of three parts of grease to one of turpentine.

FISH, FOOD FOR SHEEP.

It is a fact, though not generally known, that sheep will greedily eat any kind of salted fish, whether dry or pickled, although dry seem the most suitable for them; and it is found by experience that sheep that have as much fish as they can eat are always healthy, have good lambs, and do not loose their wool; and require much less other food. It is not expected that farmers remote from the sea-shore can afford their sheep as much fish as they would eat; but, if they give them fish instead of giving them salt, they will find a great advantage. Smoked Alewives and Herrings are most convenient for them; larger fish should be cut or broken in small pieces. The cheapest kinds of fish, such as scale of all kinds, broken, refuse, and even those that are partly damaged, if they are only salt, will answer the purpose.

It is generally the case with herring catchers that they are obliged to cull out and throw away great numbers, sometimes half they take, because they are to bear inspection: such might be salted and smoked or dried in the sun, put up in dry casks, afforded at a low price—by which means, thousands of barrels might be saved which are now suffered to rot on the shores.

TO PRESERVE POTATOES WHICH ARE FROZEN.

Cover them, while frozen, with two or three feet of sand or earth, and let them remain till thawed. The watery part of the potatoe, when converted into ice, occupying a larger space, removes the solid parts to a greater distance from each other, occasioning thereby a partial disorganization which, like animal inflammation from cold, will end in putrefaction, unless a low temperature is maintained until the solids gradually regain their former powers.—*Farmer's Mag.*

☞ They may be thawed in cold water, which will take out the frost without injuring the vegetables.

Ed. N. E. Farmer.

Live constantly in the unshaken belief of the overruling Providence of an infinitely wise and good, as well as Almighty Being; and prize his favor above all things.

Accustom yourself to temperance, and be master of your passions.

Be not too much out of humor with the world, but remember, it is a world of God's creating, and however sadly it is marred by wickedness and folly, yet you have found in it more comforts than calamities, more civilities than affronts, more instances of kindness towards you than cruelty.

From the Christian Register of November 1.

GARDINER LYCEUM.

Mr. EDITOR—I observed in the Hallowell Gazette of the 12th ult. an address to the public, from the Trustees of the *Gardiner Lyceum*. The knowledge that such an institution is about to be established, cannot be too widely diffused. That our colleges are useful and necessary to those who intend to pursue one of the learned professions cannot be denied; but they are by no means calculated to supply that particular kind of knowledge which is necessary to the Farmer and Mechanic.

The utility of an institution like the Lyceum will be best shown by a few extracts from the address.

The small number of mechanics acquainted with those principles of natural philosophy, upon which the successful operation of their arts depend, has been long a subject of regret. Artists, it is true, are found in various departments, who, by means of uncommon natural talents, are able to acquire the knowledge of those scientific principles, which are most needful to them; but those to whom nature has been less liberal, can only execute in the way in which they have been taught, and while they adopt the rules and recipes of their predecessors, they are obliged to perform much unnecessary labor, because they are unable to distinguish the essential from the accidental parts of their processes. And even those of superior endowments are obliged to spend much labor in acquiring principles, which are among the first rudiments of a regular education. Nor have our farmers hitherto had that knowledge which would enable them to improve the powers of their soil, or the machines necessary for cultivating it, and preparing their produce for the market. The knowledge necessary for these descriptions of persons is confined to colleges; but science is there taught, not to persons who are to make a practical use of it in after life, but as part of a course of general education to those who are destined for the liberal professions. The details of the practical application of science to the particular arts would be altogether inconsistent with the objects of these institutions. Neither could those who are to support themselves by manual labor, spare the time or meet the expense of a collegiate course, with its long train of preparatory studies, particularly when a large part of that course would not only be useless, but would serve to give them a distate for their future pursuits in life.

The practical utility of science cannot be doubted, in an age where its investigations have produced such astonishing improvements as in the present. There is scarcely an art which has not directly or indirectly received from it important services; for science must necessarily be the foundation of every art. Not that the arts originate in the speculations of the philosopher, or cannot be practised without an acquaintance with science. On the contrary they frequently owe their beginning to accident; and the knowledge of the art is but the knowledge of a few insulated facts. These facts, observed by the man of science, lead him to an investigation of their nature, and the laws according to which they are produced. He discovers what is necessary and what is accidental in the process, and thus infers an easier and cheaper mode of arriving at the same result. Chemistry, as a science, has scarcely existed half a century, and yet no science can so proudly boast its contribution to the arts. To many trades, it is absolutely necessary, and to almost all, highly beneficial. The tanner, the bleacher, the dyer, the druggist, the manufacturer of pot and pearl ashes, of soap, of copperas, and all the salts of commerce, of spirituous and fermented liquors; all these, and very many more, find their arts dependent upon chemical processes. The mason needs chemistry to mix properly the ingredients of his mortar, the blacksmith to temper his edged tools, and even the baker to ferment his bread. It is true, these arts may be, and are successfully practised by attentive and intelligent persons, ignorant of science; but a knowledge of chemistry would enable men of an inferior class of mind to become skilful; would make the success of all more certain; enable them to investigate the causes of occasional failures, and to guard against their recurrence.

Agriculture, too, depends much upon chemistry. It is the business of this science to investigate the nature of soils, the causes of their fertility or barrenness, to ascertain the composition of manure, and the kind best suited to give fruitfulness to each kind of soil. The experience of Lavoisier, who in a few years doubled his crops, is sufficient to prove the utility of chemistry, when applied to the cultivation of the earth.

With a view to furnish to farmers and mechanics the education here represented as so useful, the Gardiner Lyceum has been established; and the course of study will be arranged with a particular reference to the wants of those classes, for whose particular benefit it is designed. As soon as a suitable apparatus can be procured, lectures will be given upon the sciences there taught; and the application of those sciences to the arts will be illustrated as fully as the nature of the lectures will admit. As fast as the funds of the institution will allow, models will be procured of the best machines employed in the useful arts. Specimens will likewise be collected of the natural productions of the country, as opportunity offers; and they will be deposited in a cabinet in the Lyceum.

Candidates for admission to the Lyceum will be required to produce certificates of good moral character, and will be examined in the four fundamental operations of arithmetic: addition, subtraction, multiplication and division, both upon simple and compound numbers, and in reduction. It is also very desirable that English Grammar should be understood by those entering the Lyceum; and although the trustees do not at present consider it as an indispensable requisite, yet they hope it will have been studied by persons applying for admission. The studies in the Lyceum will be—

For the first year—Arithmetic, Algebra, Geometry, Trigonometry, Mensuration of Surfaces and Solids, and Book-Keeping.

In the second year—Surveying, Navigation, Mechanics, Hydrostatics, Pneumatics, and Chemistry.

No student will be required to attend to all the branches of instruction for the second year, but only those which are best adapted to his future wants. He will also be instructed in the practical application of the knowledge thus acquired to the particular art which he is to practice. Two years will complete what is deemed an essential course; but instruction will be afforded to those who wish to continue their studies another year.

The studies of the third year will be—

Other branches of Natural Philosophy, the higher branches of Mathematics, Natural History, and the first volume of Stewart's Philosophy of the Mind.

There will be regular exercises in English composition; and each Monday morning all the classes will be instructed in the principles of natural and revealed religion.

The trustees consider the location of the Lyceum in the town of Gardiner as peculiarly fortunate, from its central position, on a navigable river, in a populous neighbourhood and fertile country, where commerce is continually extending, and in a town possessing uncommonly fine mill privileges, and which already offers to the student in mechanics the exhibition of a greater variety of machinery moved by water than can be found in any other town in the state."

[The Lyceum was incorporated at the last session of the Legislature. The trustees are about erecting a stone edifice for the accommodation of the students, and the institution will go into operation some time in January next, under the superintendance of the Rev. Benjamin Hale.]

"The trustees conclude their address with expressing their confidence, as they are engaged in an object calculated to meet the wants of a state which possesses all the requisites for becoming great, and distinguished in agriculture, manufactures, and commerce, that they shall not want the support and encouragement of the public. They are engagad in no private enterprise. They expect to profit no particular class of men, but to aid those who form the bone and sinew and muscle of the body politic. They aim at the public good, and hope for the public patronage." F.

From the National Ægis.

MINERALOGICAL.....No. I.

The objects of an enlightened system of agriculture are philosophical, so far only as they follow nature. Art may plant, industry may water, but nature gives the increase. The plough and the cart may have been used, according to the best modes of improvement, and yet the tracts of land on which they have been employed, may produce but miserable crops. We seldom have the charity to attribute the sterility of farms, to any thing but the indolence of the proprietor; when, perhaps, the true cause is in the nature of the soil itself. The husbandman may waste the sweat of his brow, and the toil of his hands for years, by perseverance in the same course which, with his neighbours, gives a rich reward. To remedy any evil, it is first necessary to seek out its cause. Now, a little of that knowledge derived from books, against which a prejudice has been so unreasonably entertained, would inform the farmer that the reason why *his* crops were not as good as another's, must be, that he did not adapt the plants to their proper soil. He would learn that the same labour which has been bestowed without benefit, would, if properly directed, have filled his barns with abundant harvests, and converted his barren plains into a garden.

How far the same laws regulate vegetable and animal economy, has not been exactly determined. Certain it is, that there is an analogy in the laws, which regulate both kingdoms.

All the stock of the husbandman requires feeding, and as he would not give his oxen sulphuric acid for drink, or arsenic for a baiting, neither should he treat his field of rye or wheat in the same manner. Those poisons which are most deleterious, belong to the classes of Minerals. All the metals which are so numerous and so widely disseminated, are highly prejudicial to animal life, and that they are injurious to plants, may be inferred from the facts, that, districts in which mining is pursued to the greatest advantage, where the greatest wealth abounds in the bosom of the earth, are barren and sterile on the surface.

It is an hypothesis now generally received by writers, that different plants, require different nourishment. If the growth of the forest is succeeded, not by the same tree, but by a species totally different from the former occupant of the spot, it is believed to be, from a wise provision of Nature, requiring that the plant whose peculiar food was consumed, should seek a more favorable situation. Most persons who are observant of the phenomena exhibited around them, must have remarked the daily changes taking place in the growth of our forests. The lofty pines, which at one time formed the most numerous variety of our timber trees, have almost disappeared, and instead of them, the oak and the walnut have sprung up and occupy their places in the woods. The explanation of this fact is not difficult upon the theory to which we have alluded. Let us suppose a soil, constituted of resinous, nitrous, and alkaline earths. If the resinous particles existing in the soil are the food of the Pine and necessary to its life and vegetation it is evident that where these particles shall have been exhausted by the continual draughts made upon them, for the supply of so many roots and branches, the individual can no longer exist.* If young trees of the same species should rise from the seeds deposited near the parent trunk, they must soon perish, from the want of the support essential to their healthy state.—The soil according to the supposition still contains nitrous and alkaline particles. Assuming, that the first of these, are the proper nourishment of the Walnut, that tree will flourish upon the spot where the Pine once stood, until these are exhausted, when it must share the fate of its predecessor. Two of the constituent parts are now consumed, on the third the Oak may subsist and strike its roots deep and shoot its branches high. This exemplification is selected as a familiar one. The application is obvious to other examples. It shows the close connection that should subsist, between the practical and the scientific man. It evinces conclusively the beneficial results that will attend the prosecution of Chemical and Mineralogical pursuits. If the wheat is blasted, or its produce be light and ill-conditioned, the fault is more likely to be found in some quality of the soil prejudicial to that grain, than in some harmless insect or innocent shrub. If the food necessary for the Rye be exhausted by a single crop, it would be folly to expect a second to thrive on the same field. If properties noxious to the Rye, are beneficial to the Indian Corn, then, the commonly practised succession, which placed that grain before the other, is founded on sound reason. It is true, that experiment has not, as yet, rendered these principles "doubly sure;" but this should only be an incentive, urging the curious to investigations so important to the good management of rural concerns.

Men who have not been accustomed to scientific pursuits, are usually frightened and discouraged, by their apparent abstruseness and difficulty. To such, abstract studies must be divested of some of their rigor, or they will never be pursuaded to follow them. It cannot be expected, nor is it wished that the intelligent, practical farmers of the country should waste their time, and perplex their minds, with deep inquiries into Mineralogy, or be able to take rank with the Werners, the Hauys and Cleavelands, who have adorned and improved that department of knowledge. But it is desirable that they should be acquainted with so much of it, as to be able to distinguish the several mineral productions of their lands and be acquainted with their several properties. The practical agriculturist, is ignorant of many sources of revenue which he might possess. His lands may contain treasures, of which he has never dreamt. His plough daily turns up substances, which would be valuable, were he only acquainted with their worth. Those tracts which are parched by the summer sun, and which, to his eye, are sterile and barren, may contain hid in their bosom, mines and metals which would amply repay the toil and expense of exploring them.

In recommending Mineralogy to attention in its connection with agriculture, it will be proper to state the grounds of the faith that is in us, of its usefulness. This shall be attempted in a subsequent number. A FARMER.

* *Note by the Editor of the N. E. Farmer.*—Resinous particles are formed in plants during the process of vegetation, being extracted from hydrogen, one of the chemical constituents of water. "All kinds of vegetables, when assisted by the rays of the sun, have the power of decomposing water; during which decomposition the hydrogen is absorbed, and goes to the formation of oil and resin in the vegetable."

Parkes' Chemical Catechism, p. 54, 10th Ed.

From the Hallowell Advocate.

In a late Advocate was published a new Rule for guagings casks, given by SAMUEL PRESTON, Esq. of Stockport, Pennsylvania. This rule was first published in the *New England Farmer*, and is recommended by its author as useful to the farmer in ascertaining the quantity of cider he makes, and exceeds in accuracy and brevity any other rule before employed. The rule is as follows:—

1. Multiply the *mean* diameter of the bung and head diameter by itself.
2. Multiply the product by the length of the cask.
3. Multiply that product by 34.
4. Strike off four decimals, and you will have the true contents in gallons and decimal parts of a gallon.

The admeasurements are to be taken in inches and tenths of inches.

The author of this rule gives no explanation of it, but calls upon the mathematical student to give an explanation or demonstration of it.

As the reasons of all parts of the rule may not be readily hit upon, and to know the *rationale* on which it is founded may be gratifying to those who may happen to make use of the rule, the following explanation is given, adapted to any common understanding.

As necessary to the explanation of the rule, we premise the following principles—to obtain the cubic or solid contents of a regular body, you must first get the *superficial* contents of a base of it. For example, to obtain the cubic contents of a parallelopipedon, or, in other words, of a square stick of timber of equal size from end to end, you first get the superficial contents of one end by multiplying one side of the square into itself; then multiply the superficies of the end by the length of the stick, and you will have the cubic contents in the same denomination of measure as you have employed in the previous work. If the stick be of unequal dimensions, you must take the *mean* of the diameters in different parts, and from this mean diameter obtain a *mean* superficies, and multiply this superficies by the length of the stick for the solid contents.

To apply these principles to the first step in the above rule. A cask, being a cylinder of unequal diameter, you will first take the mean of bung and head diameter for the *side* of a square, equal to said mean diameter. You then multiply this mean diameter into itself, and this gives you the superficial contents of a square made by the mean diameter. Then the 2nd step in the rule, viz. multiplying this superficies by the length of the cask, gives you the solid contents of a parallelopipedon (of which the form of a square stick of timber is an example) whose base or end is a square of the mean diameter of the cask, and of the same length as the cask.

The reason of the 3d step in the rule is not so apparent as the preceding steps, and requires a more particular explanation—and as the 3d and 4th steps are so connected in principle as to be incapable of explanation separately, we shall consider them together.

It must be recollected that the process thus far explained, has given us the solid or cubic contents of a square stick of timber, whose diameter is equal to the mean diameter of the cask whose contents are to be ascertained, and whose length is the length of that cask; and that the object to be obtained by the 3d and 4th steps is to get the cubic contents or capacity of the cask in *gallons* and decimal parts thereof. Now it is evident from inspection that a *square* stick of timber, whose diameter is the mean diameter of the cask and whose length is the same must be greater in solid contents than the cylinder whose diameter and length is the same. Then we must reduce the contents of the square stick of timber already obtained to those of the cylinder of the same diameter and length—that is, of a cylinder whose diameter is the *mean* diameter of the cask. Now the cubic contents of the cylinder and the square stick have the same proportion to each other as the superficies of their ends, viz. the circle and square, their diameters being the same. The superficial contents of a circle are to the contents of a square whose side is equal to the diameter of the circle as '7854 decimals to unity. Now then, we want to reduce the contents of the square stick to those of the cylinder. Therefore multiply the product of the 2d step by '7854 decimals and cut off four decimals in the product, which is the same thing as to multiply by $\frac{7854}{10000}$, this being the vulgar form of that decimal; as in a vulgar fraction, you always in multiplication multiply by the numerator, and divide by the

denominator. This done, you would have the cubic contents of a cylinder equal to the cask in cubic inches. To bring this denomination into gallons, it would be necessary to divide by the number 231, this being the number of cubic inches in a Wine gallon.—But to save this long process of multiplication and division, adopt this rule, viz. *to multiply by the Quotient of a multiplier divided by the divisor by which the product produced by such multiplier is proposed to be divided, and you will have the same result.*

Now 34 is the Quotient of 7854 divided by 231. Therefore multiplying by 34 produces the same result as to multiply by '7854 and dividing by 231—taking care in the product to cut off as many decimals as there are in the multiplier '7854. And these are the reasons for the 3d and 4th steps of the rule. And the result is the contents of the cask in gallons and decimal parts thereof.—Thus we have the *reasons* of the rule. HHD. ALIAS 4 BBLS.

From the American Farmer.

TO CURE BACON.—*Virginia* vs. *Burlington.*

Richmond Co. (Va.) Nov. 24, 1821.

Mr. Skinner—Having seen in the 20th No. of the 3d Vol. of your American Farmer, a refusal of one, who has been specially called on to communicate his knowledge or mode of curing Burlington hams, I cannot longer refrain from giving such information as I possess, in curing hams according to our Virginia mode, as practised by me for many years, and which on trial I am induced to believe, will be found fully equal, if not superior, to the Burlington, or even the celebrated Westphalia. This I do with pleasure, having no secret to preserve, being no "trucker or trader."

My practice is as follows: first salt the pork by giving it a pretty good salting, and pack it away on boards or planks, with a slope sufficient to let the brine run off. In this situation it lies ten or twelve days, when it is taken up, and each piece wiped dry, with a coarse cloth, and to each ham is added a heaping tea spoonful of the best chrystalized salt petre, by sprinkling over it, and rubbing it well in with the hand. It is then re-salted again, and packed away on planks or boards, laid horizontally, or in tight casks, if you have them convenient, as it may then be an advantage to retain or preserve all the brine you can: whereas the first brine I have found from experience to be of great injury, as it tends to putrescence, and should by no means be reabsorbed by the meat laying in it after being extracted by the salt; as I conceive it to be that which produces the bugs and skippers in the meat after it has been smoked. The time of putting on the salt-petre is of much more importance than is supposed by those who have not made the trial, for if put on at the first salting, the meat is always dry, hard, and too salt; but why it has this effect, I am not chymist enough to determine. On giving the meat a second salting I add to the salt as much brown sugar or molasses as will moisten or damp it, and as much of the common or red pepper as will give the salt quite a red appearance. The pods are first dried before a fire or on a griddle, and then pounded tolerably fine in a mortar. The meat then lies about 5 or 6 weeks when each piece should be rubbed well with hickory ashes, and hung up to smoke with the hock downwards, which prevents its dripping and thereby retains its juices. The Liverpool sack-salt is what I have generally used, and I think it is much to be preferred to any other.

The smoke is generally made from chips raked up from the wood-pile, with a little of the dust, dotted, or rotten wood with it, to prevent a blaze or clear fire, and too great a heat, saw dust of hickory or oak is still better to make the smoke, to which is added two or three pods of the red pepper each day.

After it is sufficiently smoked, which it will be in five or six weeks, if regularly attended to, it is taken down and packed away in casks or boxes, with hickory ashes, covering the meat entirely with them, and between each layer is put some thin slips of lath or boards to prevent each layer of meat pressing down and touching each other, and in the course of the summer it is taken out and sunned once or twice.

If it is intended for exportation, bran is the thing to pack it in, for shipping, especially if it is intended for a southern market. By this mode of curing my bacon has got the reputation (by those who have eat of it,) to be equal if not superior to any they have ever tasted. But I concur with. Mr Coxe, the writer in your 20th No. of the third Vol. that "a great deal depends upon the nature of the flesh of the several breeds of hogs" and the manner of raising and feeding. From the experience which I have had I think a cross of one-fourth of the Chinese, on our common stock, which is a mixture of the English breed including the Parkinson, which we have among us, is the most delicate in flavour and taste, and easier to be raised and kept fat, consuming less grain. The meat of those which are suffered to feed in the fields and woods, with a little feeding with grain until they are put up to fatten, are far superior to those which are raised in the sty, and fed on grain and slops, as is the northern custom.—Their meat is much larger and coarser than ours, and may answer very well for salting and barreling up as pork, but by no means answers as well for bacon, being too coarse and strong in flavour. The manner in which our hogs are raised and fed, and their size, I consider the principal reason why our Virginia hams have been so much approved of, both in this country and in Europe. I have tried various ways to fatten hogs, after they have been put up for close fatting, but have never found any thing to equal Indian corn or meal; turnips, potatoes, peas, pumpkins &c. will do very well when they are first put up, but must be left off some weeks before they are killed, in order to harden their fat, and give it a superior flavour, by using Indian corn alone, with a little salt water, or a salt herring once or twice a week.

To make bacon of the most delicate flavour, the hogs should not exceed 160 lbs. in weight, nor 21 months in age, and it is for this reason, and the great economy in raising and feeding, as well as preventing their becoming mischievous and troublesome on a farm, that I approve of Col. Taylor's system of killing every hog on the farm every year that is ten months old and upwards, except the breeders. I have followed this practice for about seven years, and have found a considerable profit in it as hogs kept over two winters, are very unprofitable, and their flesh by no means as delicate and sweet. Hogs from 10 to 21 months old, with a little more than the ordinary keeping with us (which is very ordinary indeed, as we generally leave them much to prog and shift for themselves) will weigh from 120 to 180 lbs. and the sweetest and most delicate flavoured hams will not be found to exceed from 10 to 15 lbs. in weight even of hogs of their age, and when older they are much coarser and less savoury.

These, Mr. Skinner, are my ideas, obtained from experience and thrown together in a very home-spun manner, and should they on trial be found to please the palates of others and be generally adopted by them, I may be benefitted instead of injured, as was apprehended by a Burlington dealer, for as I sometimes travel from home, and am fond of good bacon, I may the oftener get a cut of ham after my own mode of curing. And with very great respect, and my sincere wishes for your success in your very useful paper,

I am your most obedient,

JNO. DARBY.

THE FARMER.

BOSTON:—SATURDAY, NOV. 16, 1822.

ADVANTAGES OF TAKING AND PATRONIZING THE NEW ENGLAND FARMER.

"*There is that withholdeth more than is meet, but it tendeth to poverty.*"—This was a wise saying of the wisest of men. We trust, however, that our agricultural brethren of New England do not intend to give *practical* comments on this text by withholding patronage from a paper devoted almost entirely and exclusively to their interests. This would be to lose dollars in saving cents; and to economize about as unprofitably as he does who but half manures his land, or allows but half the requisite quantity of seed when he sows his wheat, rye, clover, &c.

It is very true that many farmers, whom we should be happy to enrol on the list of our subscribers, may have a very good knowledge of their business, derived principally from experience; and although Dr. Franklin declared experience was a dear schoolmaster, yet it must be allowed that the said experience gives pretty thorough going lessons, and brings them home to men's business and bosoms in such a manner that its admonitions are not easily forgotten. Dr. Franklin likewise said, in substance, that those persons who would learn nothing except what they were taught by experience, were *fools.** Now this is a hard name, which we hope will never be correctly applied to any individual farmer, at least within the compass of the circulation of our newspaper. But, *the cheapest way to gain knowledge is to take advantage of the experience of others;* and he who refuses to be taught by the experience of others, if not a fool, is certainly not *so wise as he might be.* Now the New England Farmer is intended to be *a record of the experience of husbandmen in every branch of agriculture and domestic economy.* That there will be faults and

* We believe Dr. Franklin's adage was, "Experience is a dear school, but fools will learn in no other."

inaccuracies in this record is to be expected as long as error is one of the attributes of humanity. But we believe that we shall be able to give in this work more valuable information relating to the most useful and important of the arts, as well as the most extensive and noble of the sciences, than can possibly be obtained at so cheap a rate from any other source of agricultural knowledge. In making this assertion we hope not to be accused of arrogance. The Editor claims no merit but that which arises from industry and good intentions. But if we faithfully avail ourselves of the sources of information within our reach, and make a good use of the local advantages which Boston affords for obtaining the publications of different societies and individuals both in Europe and the U. States, our paper cannot fail to prove an acquisition to any person who is engaged in agriculture or its kindred arts. Indeed the recipes, economical processes, &c. must make it a valuable *family book*, and if not exactly a "Cook's Oracle," it would be at least a good Housekeeper's Companion, and in some instances it may aspire to the honor of being a "Young Farmer's Guide."

The New England Farmer, it should be recollected, is not an *advertising* paper, and as it is often necessary to give engravings, which are expensive, prompt payment, and a pretty large list of subscribers are indispensable requisites to its existence. It is moreover a *very cheap paper*. We give a subscriber, for two and an half dollars, more matter than he could obtain in almost any other recently printed book [the New England Farmer may be considered a book, printed in weekly numbers] for ten or twelve dollars.

We not only give a great quantity of matter, in proportion to the price of our paper, but the quality is exactly that which must prove of the greatest utility to a farmer and his family.—With regard to the mode in which it has hitherto been conducted it behoves us to say but little. If we should speak favorably of our own labors we should be guilty of boasting; and if we should lament our deficiencies we might possibly be accused of affecting a degree of humility which we do not feel. We have been so fortunate as to procure the approbation of the Officers of the Massachusetts Agricultural Society, which we consider as the best reward of our past exertions, and the highest stimulus to our future efforts. We have no doubt but that, according to the old adage, "practice makes perfect," we shall be able to improve as we advance in our editorial career, and hope that our future numbers may better deserve the favor of the public than those which have already been well received by competent judges.

We have in contemplation some arrangements relative to our paper, which we conceive may enhance its value. Among others we propose to give articles from the most approved authors relating to the diseases of cattle, horses, swine, sheep, &c. We may thus enable our subscribers, no doubt, in many instances, to save valuable animals, when attacked by disease. This may be the more advisable on account of our country's containing very few Farriers, or Veterinary Surgeons by profession. Every farmer must, in many parts of New England, be his own cattle-doctor, and it is hoped no farmer will take amiss some directions relative to a science of such indisputable, and almost indispensable utility. We hope in the present volume to incorporate some complete treatise on this subject, and shall take the advice of some scientific friends, as well as exercise our own judgment in selecting for republication, some work which will be plain, practical, and have no tendency to mislead, or to sanction dangerous or erroneous practice.

Some of our friends have solicited from us, information relative to various topics, connected with agricultural improvement. Amongst others we are requested to give articles relating to the *best mode of laying down ploughed lands to grass—the best manner of reclaiming salt marshes, and converting them into tillage land—the latest improvements in the manner of cultivating hops, curing and preparing them for market—the best, least expensive, and most expeditious mode of clearing new land, covered with timber, and reducing it to its most profitable state of cultivation, &c. &c.*—We shall give our own ideas on some of these subjects, and should be happy in being favored with the opinions of our correspondents on these topics. Perhaps our friend from Stockport, Pa. will give us his ideas relating to some or all of them. We court his correspondence, and set the higher value on his communications because they appear to be derived principally from personal observation—are the result of much experience combined with good sense. They are likewise written in that plain and perspicuous style which always ought to be the vehicle of science, although literature may perhaps sometimes require something more ornate and artificial.

We shall conclude this article with a word or two by way of answer to an objection which we have heard stated against some of the matter in the New England Farmer, and indeed against any precise or definite rules relating to husbandry. It is said that every man must be governed *solely* by his own judgment and discretion, because circumstances so alter cases, soils are so different, &c. that no two farms can be profitably cultivated in the same manner. General rules, however, are useful, although exceptions often occur, and every cultivator is expected to exercise his own judgment, to determine whether a particular case comes within a rule, or forms an exception to that rule. Besides, a great part of the matter found in the New England Farmer, is not only derived from high authority, but is applicable in every case designated in the articles. For instance, cattle in Great Britain or Pennsylvania have generally the same or similar diseases with those of New England—steeps to prevent smut in wheat may be the same—hams may be cured and eggs preserved by the same processes, making perhaps a little allowance for a difference in the temperature of climates. And if horses will eat mangel wurtzel or sweet apples in England or Pennsylvania, they will not refuse them in Massachusetts.

Plumbago, or Black Lead discovered.—Mr. Charles J. Dunbar, of Concord, Mass. has discovered a mine or quarry of Black Lead, in the town of Bristol, N. H. He has exhibited specimens of this substance to Professor Dana, of Dartmouth College, Professor Gorham, of Harvard University, and other gentlemen who are versed in the science of Mineralogy. They all speak favorably of the specimens. Professor Dana states that those which were exhibited to him "are of the *very first quality*, and will make excellent pencils, and other articles for which this substance is employed. The specimens are far superior to the black lead found in Sutton, or in any other part of the United States, so far as I know—and equal, in every respect, to the celebrated ore of this substance found in Burrowdale, in England."

Plumbago, Black Lead, or the Carburet of Iron, has various uses, besides that of making pencils. It is used to rub over wooden machinery to prevent friction—for making crucibles and portable furnaces—it protects iron from rust, and on that account is rubbed on stoves, and various ornamental cast iron works, such as the fronts of grates, &c.

Murder.—On Saturday morning early, the body of Anthony Rogan, a young man, about 27 years of age, was found dead in Court-st. by the city watch; and the verdict of the inquest on it was, that he came to his death by wounds inflicted by some person unknown. One of the stabs entirely separated the jugular artery, and must have occasioned immediate death. He was a native of Ireland, and in the employ of Dr. *Johnson*, veterinary surgeon. He left his lodgings, in Bangs' alley, about ten o'clock in the evening; and undoubtedly repaired to the Hill, where he had a quarrel about three weeks before; and where he told a person on Friday he intended to go that night, and expected to be attacked by persons he named.

Three hundred dollars—one hundred by the city, one hundred by Dr. Johnson, and the other hundred by Mr. Thomas Kennedy—are offered for the detection of the murderer.—*Centinel.*

We learn with regret, that the Cotton Mill, in Sutton, Mass. belonging to Mr. Asa Waters and improved by Messrs. Leland, Morse & Co. with the grist mill attached thereto, was entirely destroyed by fire, on the 5th inst. With the buildings a considerable quantity of yarn and cloth was also destroyed. The fire originated in the picking room; probably from the passing of some hard substance through the picker. Loss estimated at $14,000.—*Providence Journal.*

The Cabinet Factory of Mr. Bradley of Alexandria, has been consumed by fire. Loss 13,000 dollars.

Benj. Bussey, Esq. and Amasa Stetson, Esq. have presented 50 dollars each, to the Penobscot Agricultural Society, to be expended in Premiums.

Harvard College.—The trustees of this institution have appointed Mr. NUTALL curator of their Botanick Garden and lecturer on Botany in the University. This situation was vacated by the death of Professor Peck.

Mr. Nathan Flecher, of Bradford, made, in one day, working about 24 hours, *twelve* cider barrels.

SELECTED FOR THE NEW ENGLAND FARMER.

RURAL FELICITY.

O happy he! happiest of mortal men!
Who far removed from slavery as from pride,
Fears no man's power, nor cringing waits to catch
The gracious nothing of a great man's nod:
Where the lac'd beggar bustles for a bribe,
The purchase of his honor; where deceit,
And fraud, and circumvention, drest in smiles,
Hold shameful commerce; and beneath the mask
Of friendship and sincerity betray.
Him nor the stately mansion's gilded pride,
Rich with whate'er the imitative arts,
Painting or sculpture yield to charm the eye;
Nor shining heaps of massy plate enwrought
With curious, costly workmanship allure.
Tempted nor with the pride nor pomp of power,
Nor pageants of ambition, nor the mines
Of grasping avarice, nor the poison'd sweets
Of pamper'd luxury, he plants his foot
With firmness on his old paternal fields,
And stands unshaken. There sweet prospects rise
Of meadows smiling in their flowery pride,
Green hills and dales, and cottages embower'd,
The scenes of innocence and calm delight.
Where the wild melody of warbling birds,
And cool refreshing groves, and murmuring springs,
Invite to sacred thought, and lift the mind
From low pursuits to meditate on GOD!

Turn then at length, O turn ye sons of wealth,
And ye who seek through life's bewildering maze,
To tread the paths of happiness, O turn!
And trace her footsteps in the rural walk;
In those fair scenes of wonder and delight,
Where, to the human eye, Omnipotence
Unfolds the map of nature, and displays
The matchless beauty of created things.
Turn to the arts, the useful pleasing arts
Of cultivation; and those fields improve
Your erring fathers have too long despis'd.
Turn to that science, which in ancient time
The mind of sages and of kings employ'd,
Solicitous to learn the ways of God,
And read his works in agriculture's school.

The following is a translation, by Dr. Darwin, of certain beautiful lines in Virgil's Georgics, on Ingrafting. They may form an excellent accompaniment to Mr. Preston's remarks on the same subject, which we have published on the first page of this day's paper.

Where cruder juices swell the leafy vein,
Stint the young germ, the tender blossom stain;
On each lopp'd shoot a foster scion bind,
Pith press'd to pith, and rind applied to rind,
So shall the trunk with loftier crest ascend,
And wide in air robuster arms extend,
Nurse the new buds, admire the leaves unknown,
And blushing bend with fruitage not its own.

From the Old Colony Memorial.

TO PLYMOTHEUS. *October* 31, 1822.

SIR—With many others I have read your communications upon the cock-chaffer with a great deal of interest. You are certainly very fortunate in your topic. Scarcely any one could be selected of more moment, or that ought to be more popular. The commendation which you have drawn from the Roxbury "Farmer" is no mean praise; and while his busy and potent pen is waking up the agricultural capacities of the people—I had almost said of his country—their labors must not be shamefully left only to fatten this loathsome reptile, and heighten the evils of famine. In a cause like this, alarmed by the appalling view lately presented to us by many of our fields, it becomes every man to be a philosopher, which is only to observe correctly, and report faithfully.

To eat, or be eaten, is the order of things, as the world goes at present—and instead of going into a penurious calculation about the time inevitably devoted to self-defence in this state of perpetual annoyance—would it not be wiser to reflect, that we are all for *during the war* in this respect; that he is a good soldier, who cries and fights on, and receives a badge of honor, and is *commended in orders* at the close of the campaign.

Under these circumstances, 'tis impossible that motives to perseverance can be wanting, and patriotism, industry, taste and intelligence will work wonders any where.

In your last communication in the Memorial, I apprehend you were in an error, in stating that the cock-chaffer was then "just under the sod." But many of them had already descended, probably to avoid the winter. On the 19th inst. with several respectable farmers, and upon a spot where was *grass*, (for this grub does not eat every vegetable,) I made an excavation 18 inches deep, and shaving down the sides with a spade, I found *full grown* grubs in apparent good health, in all grades of descent throughout the whole distance. "Who forms the phalanx and who leads the way," may long be unknown; but, that they know when to set out and how far to go will hardly be called in question.

This fact is of importance, you will perceive, only in relation to the time for the ploughing, which you have well recommended, and may remove the doubts of the "Farmer" about the descent of this animal.

From my first attention to this subject in July, to the 26th inst. I have been constantly puzzled with finding *two* sizes, of what I consider the same worm in company. One size, which has uniformly appeared about the same, was not more than one eighth part of that of the full grown. This small sized grub was always at the root of the grass, as late as the 26th inst. though you supposed them to have gone down.

I conclude them both to be one species, because they have minutely the same external character. Through a pretty good glass they gave the same color, an equal number of horns—tentacula—incisions—spiracles and legs. *Four* of the latter on each side (instead of *three*,) as you have been the first to state. Indeed, so minute is the similitude, that two of the spiracles on two of the shoulders on each side, and at the same place are omitted.* But you say, there were "as many spots (spiracles) as incisions." I wish you would review this point. Correctness and not criticism is my object.

It seems to be admitted that the cock-chaffer has its *period*, of four or five years—if so, all the grubs must be of one age, and nearly one size, and from a view of their nature, must pass their several metamorphoses exactly and forever in one and the same space and *period*. From this period, they could no more vary than the elephant from her two years gestation; and the progenitor, soon after depositing her eggs, is supposed to *perish*; though more agreeable to my theology, she only *dies*. Whence then these small grubs, too numerous to be anomalies? Are we then to believe an annual succession of cock-chaffer progenitors, and where it ends unknown; or resort to the doctrine of *equivocal generation*, a doctrine, which as yet, has more arguments than disciples.

I apprehend the public rightfully expect more from you upon this subject, and I intend to give you some account of several of each size of these grubs, which I have *fully committed* for trial in May. COLONUS.

* In our last No. p. 118, plate I, is an engraving, copied from a figure of the cock-chaffer, given in Anderson's Recreations, vol. iii, p. 420. The resemblance is very accurate, excepting that in Doct. Anderson's figure, *three* spiracles or spots are omitted at the end of three of the shoulders, viz. the 8th, 11th and 13th, counting from the head of the insect, and including those in which the legs are inserted.—ED. N. E. F.

CURRANT WINE.

The samples of wine exhibited at Exeter were of white and red, by Mr. Samuel B. Stevens of Exeter; and of red, by Joseph Tilton Esq. of Exeter. The wine from the white currant, for body and flavor, was preferred; and the committee awarded to Mr. Stevens the premium. This wine had no distilled spirit mixed with it, and was made by the following receipts:

"To each gallon of clear juice was added two gallons of water, and to each gallon of the mixture was added three and a half pounds of white Havana sugar, and put immediately into a clean wine barrel; after it had done fermenting it was bunged tight."

The red wine of Mr. Stevens was made by the following receipt:

To each gallon of clear juice was added two gallons of water, and to each gallon of the mixture was added three and a half pounds of good brown sugar, and put into good barrels; after it had done fermenting, it was stopped tight. In February after it was made, one gallon of the best 4th proof Cogniac brandy was added to each barrel, and stirred up thoroughly."

Both these samples were of the vintage of 1821. Mr. Stevens has the last and present year, made from his garden five barrels of this wine. And those who need such inducement to commence the manufacture of it, should be informed that it is an article quick in the market for cash, at two dollars per gallon.

Haverhill Gazette.

An Agricultural Society has been organized in the County of Bristol. Samuel Crocker, Esq. President. An Address was delivered on the 6th inst. by Rev. Otis Thompson.

VEGETABLE PRODUCTIONS.

A Beet raised by Mr. E. N. Chaddock of Hanover, Mass. weighing 21 pounds, and measuring 31 inches in circumference, was lately presented by him to the New England Museum. A beet which beat this was raised in the garden of Leonard Pratt, Esq. of Pembroke, which measures 32 inches in circumference, and weighed, when it was pulled, 22 pounds, and is mentioned as being in the Bookstore of Hill and Moore, Concord, N. H.—also in the same Bookstore, a radish 24 inches in circumference, raised in the county of Hillsborough.